

CLAIMS

1. A connection processing method of an optical fiber base material for heating and melting ends of an optical fiber base material and a dummy member or ends of two optical fiber base materials or ends of two dummy members to weld and connect both, the connection processing method comprising:

gripping an end of at least one of the bodies to be welded with gripping mechanism to face both with each other;

selecting the interval between both the bodies to be welded within 1 to 20mm;

and

heating and melting ends of both the bodies to be welded to weld and connect both.

2. The connection processing method of an optical fiber base material as claimed in claim 1, further comprising machining the end of at least one of the bodies to be welded to form the end in a convex shape.

3. The connection processing method of an optical fiber base material as claimed in claim 2, wherein

means for heating and melting the end of body to be welded is a burner, and

the height of convex shape of the end is a height going into a heating area of the burner.

4. The connection processing method of an optical fiber base material as claimed in any one of claims 1 to 3, further comprising:

detecting the interval between the ends of both bodies to be welded by means of a detector;

controlling the gripping mechanism by means of a gripping mechanism position control apparatus to hold the interval between both according to the transformation of ends by heating; and

allowing both to come into contact with each other after that to weld and connect both.

5. A connection processing apparatus of an optical fiber base material for heating and melting ends of an optical fiber base material and a dummy member or ends of two

optical fiber base materials or ends of two dummy members to weld and connect both, the connection processing apparatus comprising:

gripping mechanism that grips an end of a body to be welded;

a distance detector that detects a distance between both bodies to be welded; and

a gripping mechanism position control apparatus that controls said gripping mechanism to hold the distance between both bodies to be welded constant.

6. An optical fiber base material that is formed by the connection processing method of an optical fiber base material as claimed in any one of claims 1 to 4.

7. An optical fiber base material that is formed by the connection processing apparatus of an optical fiber base material as claimed in claim 5.

8. A connection processing apparatus that welds and connects an end of an optical fiber base material and an end of a dummy member, comprising:

gripping mechanism that grips the end of the optical fiber base material and the end of the dummy member at a position at which both ends are faced with each other;

a burner that heats and dissolves the end of the optical fiber base material and the end of the dummy member;

a distance detector that detects a distance between the end of the optical fiber base material and the end of the dummy member gripped by said gripping mechanism to be faced with each other; and

gripping mechanism position control mechanism that controls said gripping mechanism so that the distance detected by said distance detector is within a predetermined range and the end of the optical fiber base material and the end of the dummy member hold the separated position, until said burner at least heats and dissolves the end of the optical fiber base material and the end of the dummy member.

9. The connection processing apparatus as claimed in claim 8, wherein said gripping mechanism position control mechanism controls said gripping mechanism so that the end of the optical fiber base material and the end of the dummy member are located within a range to which a flame of said burner extends as the predetermined range.

10. The connection processing apparatus as claimed in claim 9, wherein said

gripping mechanism position control mechanism controls said gripping mechanism in order to weld and connect the end of the optical fiber base material and the end of the dummy member after said burner heats and dissolves the end of the optical fiber base material and the end of the dummy member.

11. The connection processing apparatus as claimed in claim 8, wherein the end of the optical fiber base material and the end of the dummy member have a convex shape of which a tip is thin, and

said gripping mechanism position control mechanism controls said gripping mechanism so that the convex shape of the optical fiber base material and the convex shape of the dummy member are located within a range to which a flame of said burner extends as the predetermined range.

12. The connection processing apparatus as claimed in claim 11, wherein said gripping mechanism position control mechanism controls said gripping mechanism in order to weld and connect the convex shape of the optical fiber base material and the convex shape of the dummy member after said burner heats and dissolves the convex shape of the optical fiber base material and the convex shape of the dummy member.